EUROCONTROL Experimental Center

Augmented and Virtual Reality Research for Tower Control at Airports

- by Marc Bourgois
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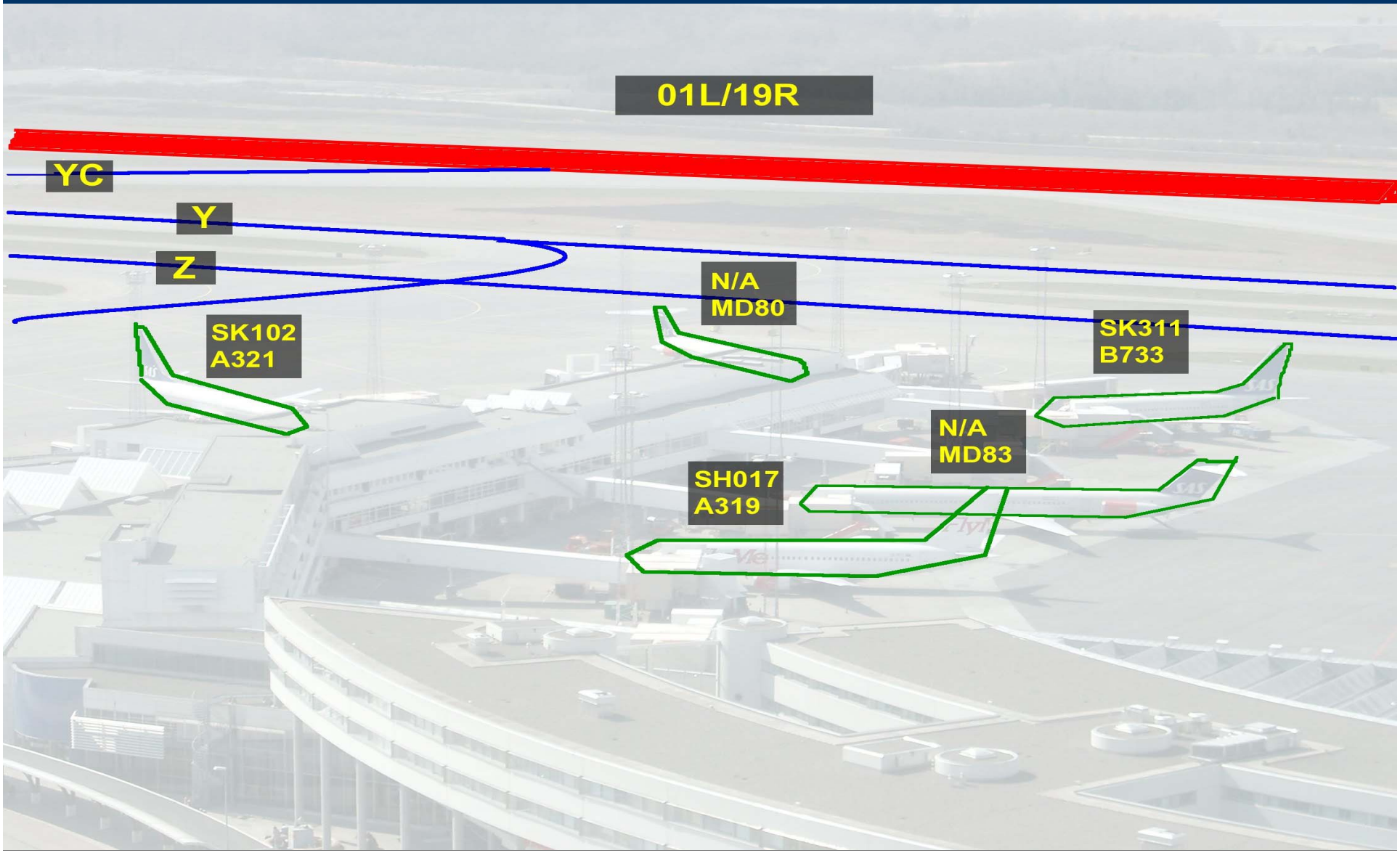
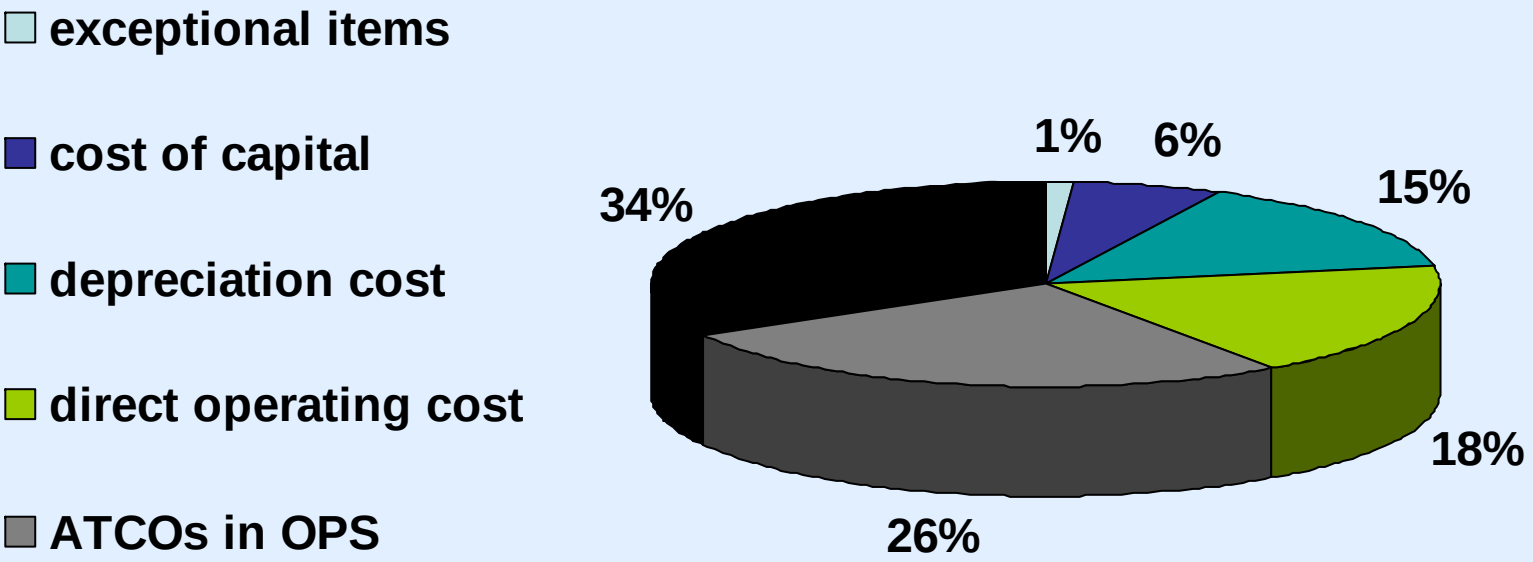
Potential benefit (1)
Increased capacity with low visibility

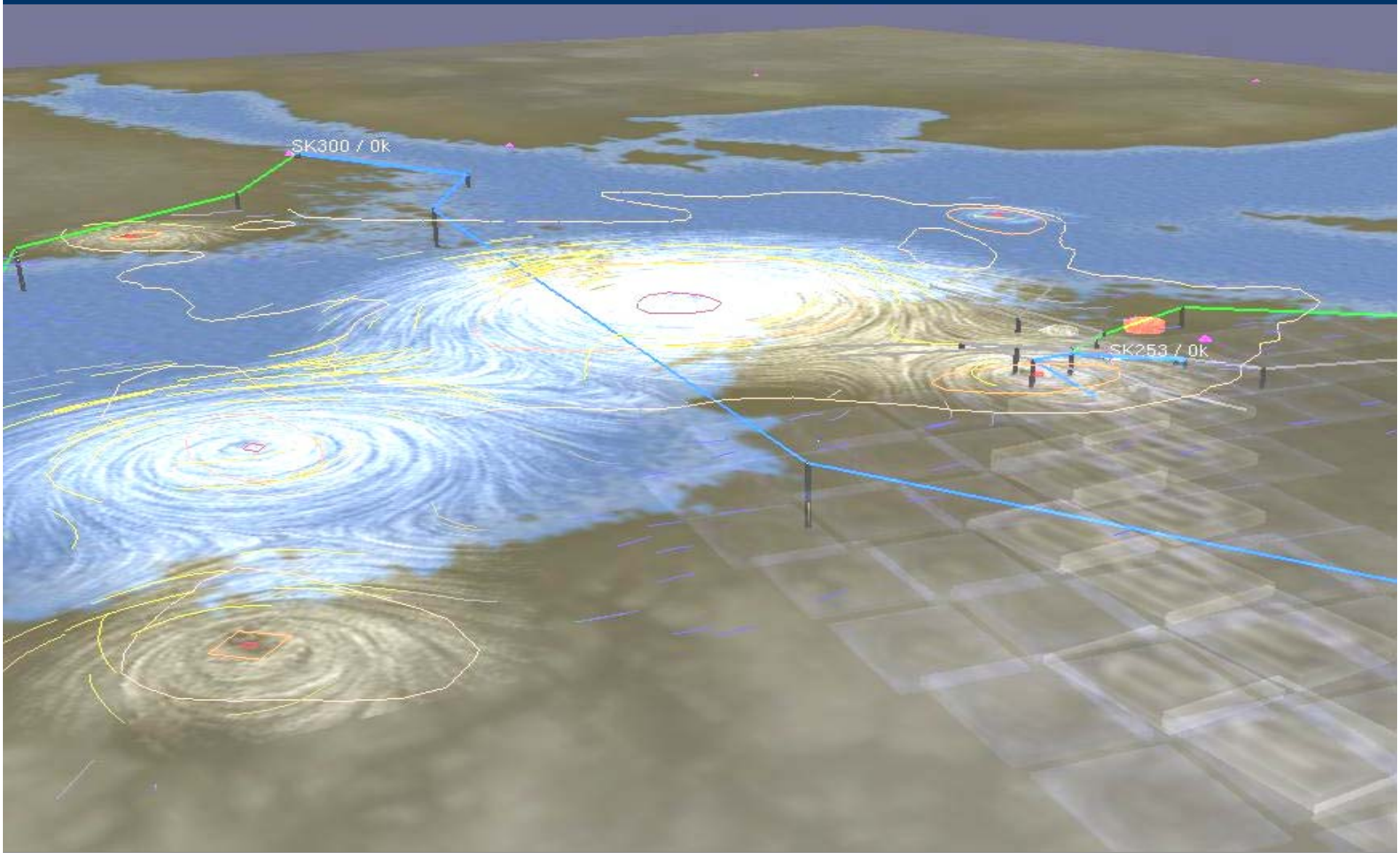


Potential benefit (2)
Reducing staffing costs

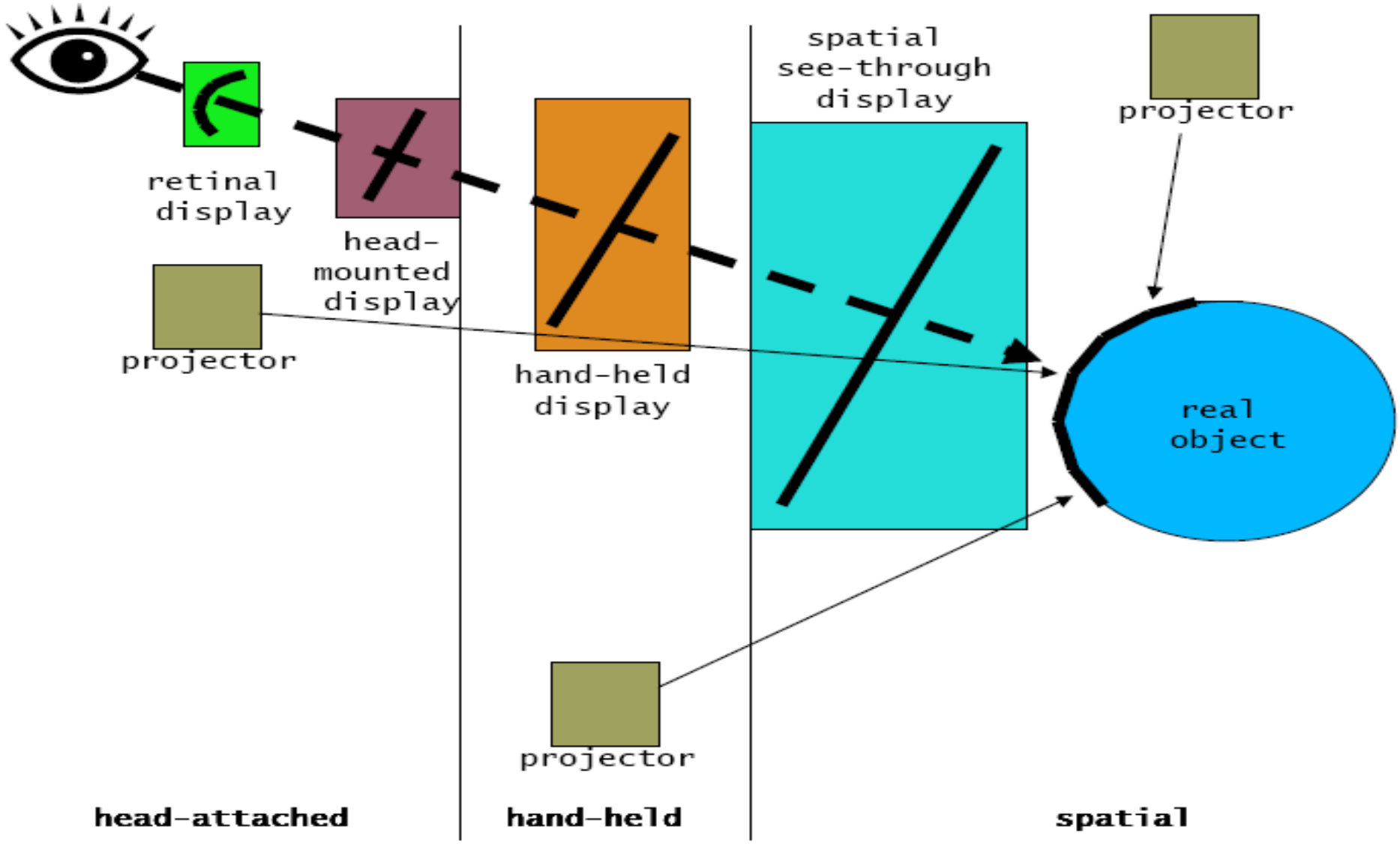


3D stereoscopic visualisation
and multimodel interaction

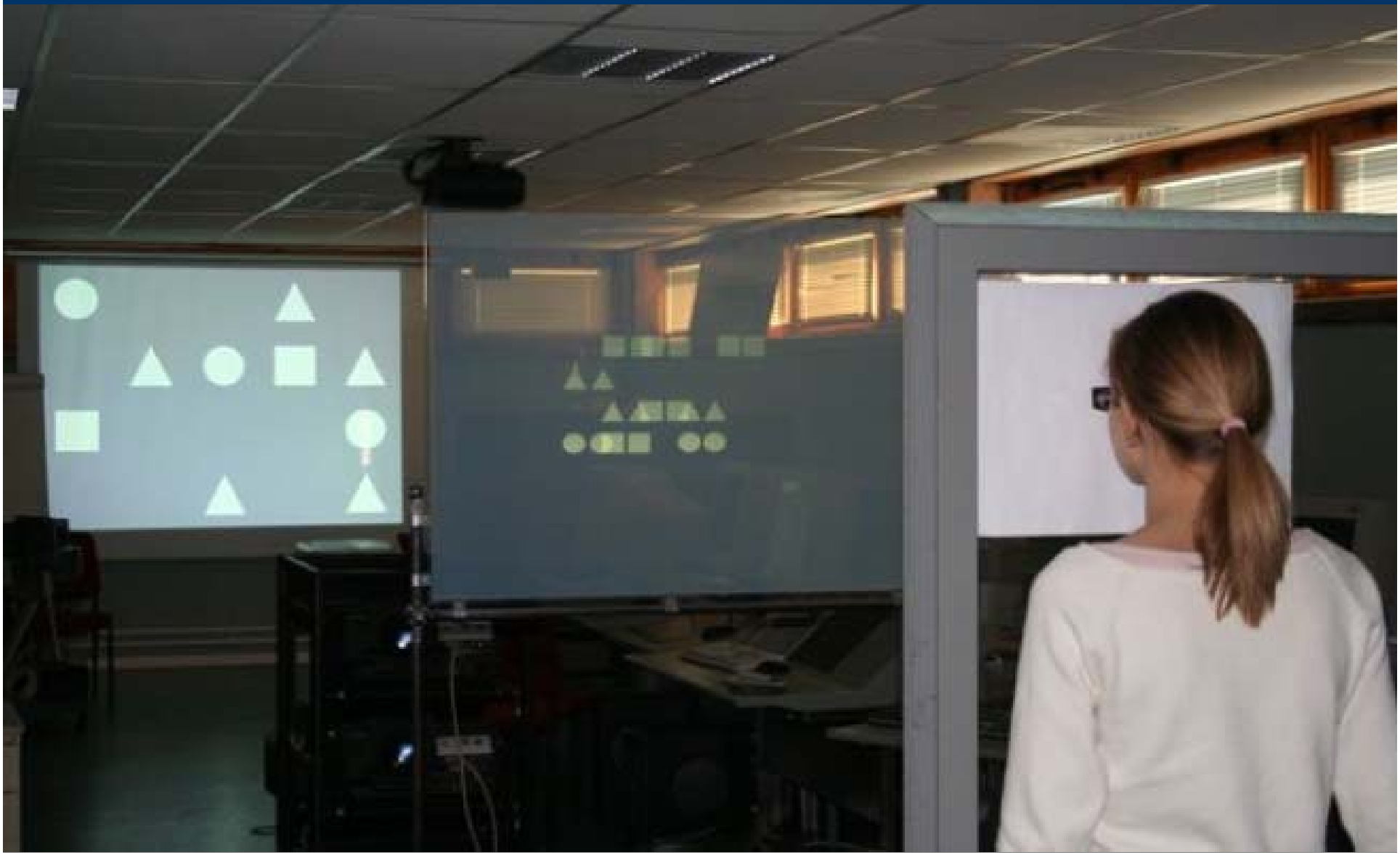
Super-imposed 3D weather visualisation



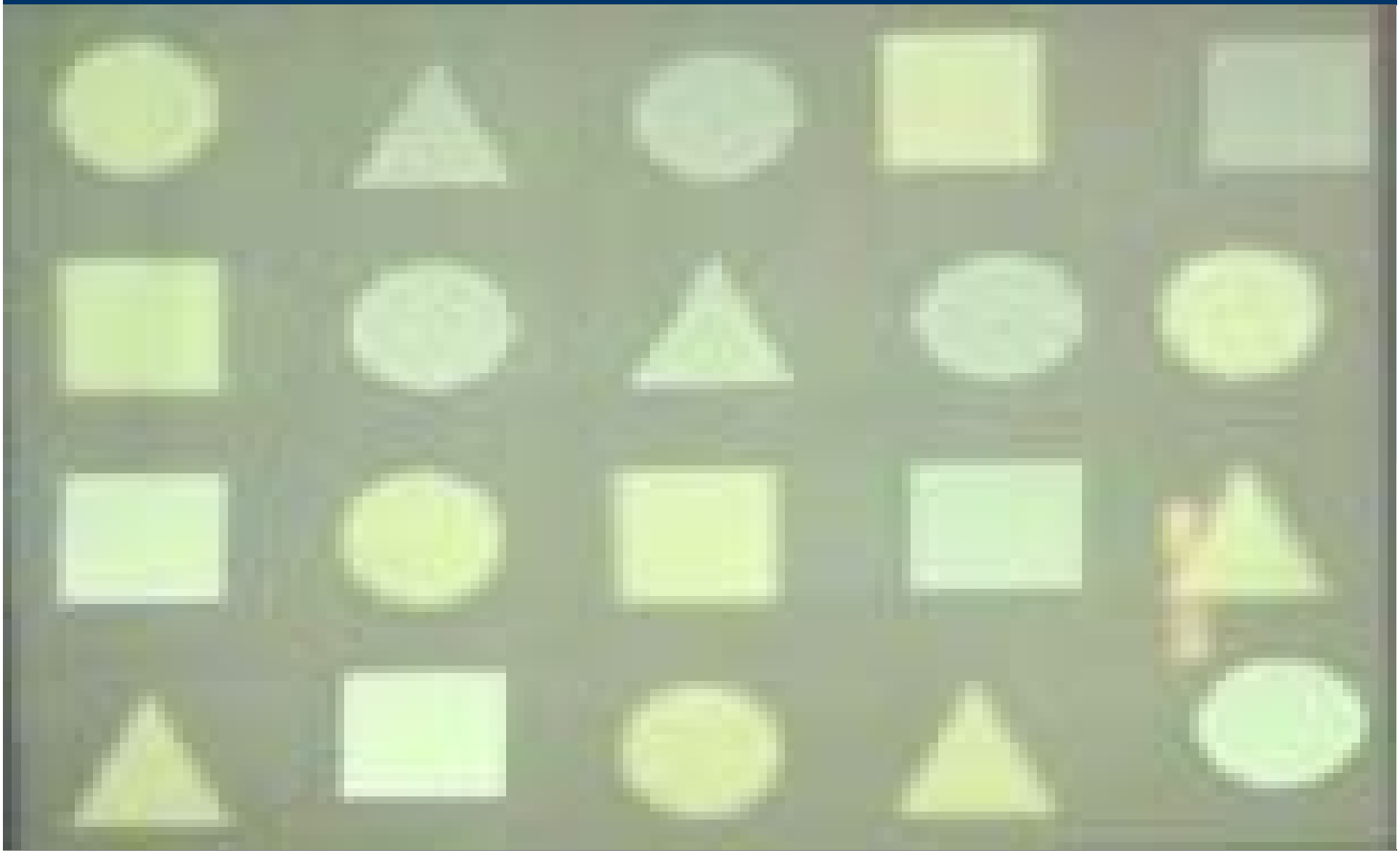
Preferring non-intrusive technologies
adapted from Bimber



Large semi-transparent displays
Benefits of collimation



Usability tests
abstract micro-tasks



What is the controller looking at?
Why do towers have windows?

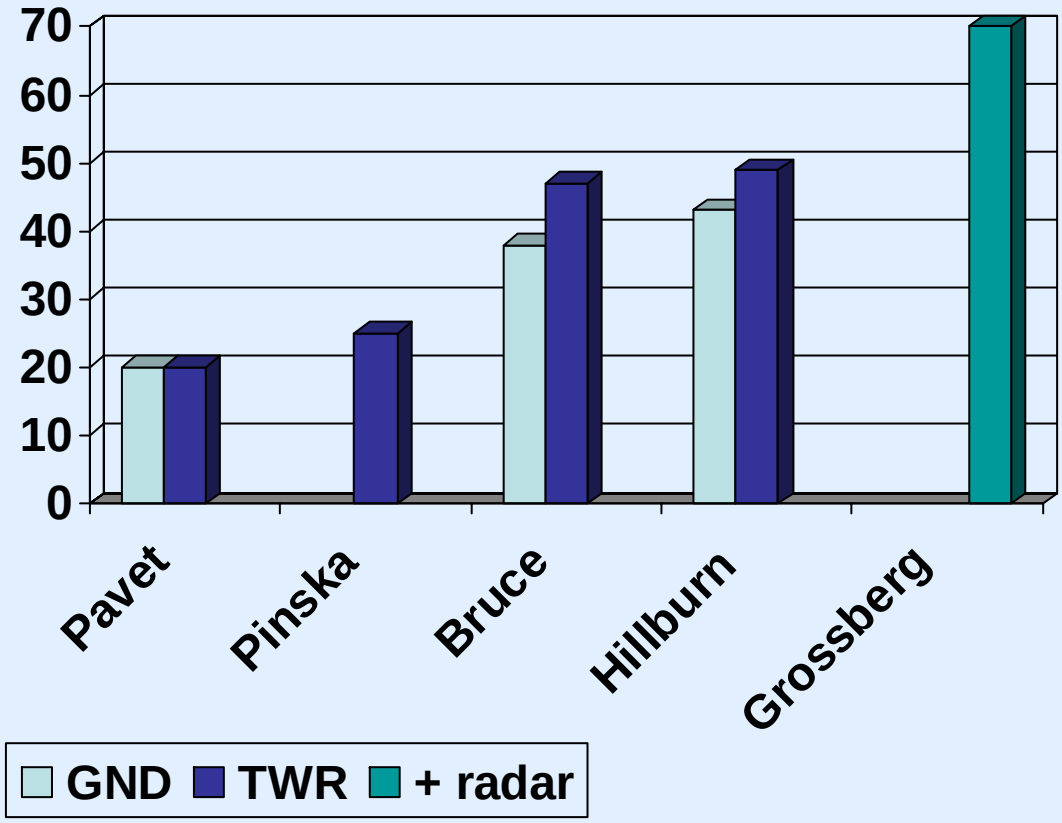
TOWER CONTROLLER (TWR)

- Runways
- Separation, deviations, incursions
- *(?) Maintain aircraft identification*
- Landings, take-offs
- Non controlled objects
- Possible conflicts (and resolution)
- Emergencies / anomalies
- *(?) Weather*

GROUND CONTROLLER (GND)

- Taxiways
- Separations, deviations
- Maintain aircraft identification
- Movements / progress
- Non controlled objects
- Possible conflicts (and resolution)
- Emergencies / anomalies
- *(?) Weather*

The controller's most used tool
The view out of the window



Camera-based panoramic display
Courtesy of DLR

Acknowledgements *(alphabetically)*

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Questions?